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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/699,772	10/30/2000	Sehat Sutardja	MP0018	6955

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EXAMINER

KINKEAD, ARNOLD M

ART UNIT PAPER NUMBER

2817

DATE MAILED: 12/10/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/699,772

Applicant(s)

SUTARDJA, SEHAT

Examiner

Arnold M Kinead

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 September 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-67 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 7-9, 11-13, 15, 17-55, 57-60 and 63-67 is/are allowed.
- 6) ☒ Claim(s) 1, 3-6, 10, 14, 16, 56, 61 and 62 is/are rejected.
- 7) ☒ Claim(s) 2 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:

1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

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DETAILED ACTION

Claim Objections

1. Claim 45 is objected to because of the following informalities: " frequencies 90..." should read – frequencies are 90...---. Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 61 and 62 are rejected under 35 U.S.C. 102(b) as being anticipated by Hajimiri et al(cited by applicant).

The reference by Hajimiri et al discloses an oscillator (see figure 5 and p. 719, part B.) having cross-coupled, frequency dependent feedback amplifier, where MOSFET(NMOS (lower pair) or PMOS) are implemented. As noted an attenuating device including tail capacitor as well as the LC tank capacitor is disclosed. Inductor(L) and capacitor(C) are shown. Finally, current sources(biasing) is represented by(Itail). The method steps being inherent.

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Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 3-6,10,14,16, and 56 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hajimiri et al(IEEE Journal of Solid State Circuits, May 99, cited by applicant) and further in view of Prior Art figure 2.

The reference by Hajimiri et al discloses an oscillator (see figure 5 and p. 719,part B.) having cross-coupled, frequency dependent feedback amplifier, where MOSFET(NMOS (lower pair)or PMOS) are implemented. As noted an attenuating device including tail capacitor as well as the LC tank capacitor is disclosed. Inductor(L) and capacitor(C) are shown. Finally, current sources(biasing) is represented by(I_{tail}). The method steps being inherent.

The reference does not show several conventional differential amplifier configurations with regards the LC elements being arranged between the supply voltage terminals with first and second biasing sources coupled to the common source nodes of the NMOS transistors. Also not shown is an implementation of this LC oscillator within a RF communication transmitter for use as a Local oscillator for carrier signal generation.

With regards the latter idea, the use of LC oscillators for carrier signal generation is notoriously well known in the art and one of ordinary skill in the art would recognize the use of such low noise oscillators in RF applications.

Also, the Prior Art figure 2, is being relied upon for showing the general LC configuration where the frequency dependent gain impedances (L₁,L₂, C₁,C₂)are coupled between the supply voltage V_{cc} and ground. The use of a single current

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biasing means instead of two separate biasing means is a simple matter of design consideration and reduces the size of the overall circuit.

In light of the above one of ordinary skill in the art would have recognized that the particular LC oscillator configuration of Hajimiri et al with attenuating means would also be applicable to all other LC oscillator differential configurations(as shown by Prior art figure 2) to help reduce phase noise in RF communication application as is desired and notoriously well known in the art. The use of a single current means helping to reduce circuit complexity.

Allowable Subject Matter

6. Claims 2 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

7. Claims 7-9, 11-13,15, 17-55, 57-60, and 63-67 are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Arnold M Kinhead whose telephone number is 703-305-3486. The examiner can normally be reached on Mon-Fri, 8:30 am -5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert

Pascal can be reached on 703-308-4909. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7724 for regular communications and 703-308-7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

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Arnold M Kinkead

Primary Examiner

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Arnold Kinkead

December 4, 2002